

REMARKS

Claims 1 and 3-51 are pending, with claims 1, 24, and 42 being independent. Claims 1, 6, 14, 24, 26, 42, and 47 have been amended. Support for the amendments can be found in the originally-filed specification, at least at page 2, line 15 to page 4, line 9 and Figs. 1-5. No new matter has been introduced.

Drawings

The Examiner has requested that applicant label the components with the descriptive name of the component. Applicant has fully complied with 37 CFR §1.84(p) and has provided reference characters for each of the components of the figures. Moreover, applicant disagrees that the addition of the names of the components would make the drawings clearer. Rather, applicant notes that the addition of text to each of the drawings would clutter the drawings and make them more difficult to read. Moreover, applicant has also complied with 37 CFR §1.83 and has shown the features of the invention specified in the claims, including showing some features as graphical drawing symbols or labeled representations. Accordingly, applicant requests withdrawal of this objection. Additionally, applicant encourages the Examiner to contact the undersigned to discuss the drawings if there is confusion regarding the various components in the drawings.

The drawings have been objected to for not showing a plasma load of a gas discharge application. Applicant requests withdrawal of this objection because applicant has shown the features that are found in the claims, and therefore has complied 37 CFR §1.83. For example, independent claim 1 recites that "the current supply unit output power is configured to supply a plasma load of a plasma gas discharge application" and Fig. 1 shows a current supply unit 31, 33 that is configured to supply (through lines 32 and 34) a plasma load. As another example, independent claim 42 recites "providing the output power of the current supply unit to a plasma load of a plasma gas discharge application" and Fig. 1 shows that the current supply units 31, 33 provide power through lines 32 and 34 to the plasma load.

Claim Objections

Applicant has amended claim 14 in accordance with the Examiner's suggestion. Accordingly, applicant requests withdrawal of this objection.

Claim Rejections – 35 U.S.C. §112

Claims 1 and 3-51 have been rejected as failing to comply with the enablement requirement. Applicant requests withdrawal of this rejection because the specification describes how to make and how to use the invention recited in the claims.

Regarding claims 1, 24, and 42, applicant has shown and described a configuration of a current supply unit (such as the current supply units 31, 33 of Fig. 1) in which the output power of the current supply unit can be supplied to a plasma load through the connection leads 32, 34. The configuration of the current supply units 31, 33 is described in enough detail to enable one to make and use the invention recited in claims 1, 24, and 42.

The Examiner points to the mention of a plasma plant at page 9, lines 27-31 of applicant's specification and appears to be concerned that the recitation fails to state any physical or actual constructive configuration of the power supply to support the particulars of a "plasma plant." First, applicant notes that details about the configuration of the current supply system are provided throughout applicant's specification, such as in the description related to Fig. 1. Second, applicant notes that the passage mentioned by the Examiner explains that the current supply system that includes the current supply units can be a plasma plant current supply system. The claims do not recite a "plasma plant" but recite a "current supply unit for a plasma gas discharge application" and such a current supply unit has been fully enabled by applicant's disclosure. For clarity, applicant notes that the specification points out that a "plasma plant" or plasma application can be, for example, a plasma gas discharge that is used in plasma etching processes or plasma deposition processes. See the specification at page 1, lines 9-11.

Regarding claims 50 and 51, applicant has shown and described reconfiguration of the electrical connections at least at page 5, lines 12-20; page 9, line 27 to page 11, line 10; and Figs. 1-5. One skilled in the art would have been enabled by this disclosure to make and use the

invention of claims 50 and 51 based at least on this description. Applicant submits that detailed procedures for reconfiguration are not necessary because the description of the claims and at least at the above passage is sufficient to permit those skilled in the art to make and use the invention. See MPEP §2164.

Claim Rejections – 35 U.S.C. §102

Independent claim 1 recites a current supply system for a plasma gas discharge application, where the current supply system includes one or more current supply units. Each current supply unit includes a plurality of current supply modules, a control unit, and a data connection. Each of the current supply modules has an input terminal, an output terminal, and a control receptacle. The current supply modules are connected such that each current supply unit has a maximum output power that is greater than the maximum output power of its individual current supply modules. The control unit is connected to one of the control receptacles and movable to any of the control receptacles of the other current supply modules of the current supply unit. The data connection connects all the current supply modules of the current supply unit to the control unit such that the control unit is able to control all of the current supply modules of the current supply unit through connection to any one control receptacle of the current supply modules of the current supply unit.

Independent claim 24 recites a current supply system for a plasma gas discharge application includes one or more current supply units. Each current supply unit includes a plurality of substantially similar power converter modules, a control unit, a data connection, and an output electrical conductor. Each power converter module has an input terminal, an output terminal, and a control receptacle. The power converter modules are connected such that each current supply unit has a maximum output power that is greater than the maximum output power of its individual power converter modules. The control unit is connected to one of the control receptacles and movable to any of the control receptacles of the other power converter modules of the current supply unit. The data connection connects all the power converter modules of the current supply unit to the control unit such that the control unit is able to control all of the power

converter modules of the current supply unit through connection to any one control receptacle of the power converter modules of the current supply unit. The output electrical conductor electrically connects the power converter modules of the current supply unit at an output side, and the output electrical connector electrically connects the output terminals of two neighboring power converter modules.

Claims 1, 3, 4, 6-10, 18, 20, 24, 26-30, and 37 have been rejected as being anticipated by U.S. Publication No. 2004/0208029 (Caruthers). Applicant requests withdrawal of this rejection because Caruthers does not describe or suggest a control unit connected to one of the control receptacles of a current supply module and movable to any of the control receptacles of the other current supply modules and a data connection connecting all the current supply modules of the current supply unit to a control unit such that the control unit is able to control all of the current supply modules of the current supply unit through connection to any one control receptacle of the current supply modules of the current supply unit, as recited in independent claims 1 and 24.

Caruthers relates to a power converter system 20 including power converter modules 24a-d each connected to a rectifier 16 and to each other. See Caruthers at paragraphs 0009-0010 and Fig. 1. Each power converter module 24a-d has an output connected to an output inductor 32 and includes a slave controller circuit 26a-d. See Caruthers at paragraph 0010 and Fig. 1. Moreover, power converter modules 24a and 24d are connected to a master controller 22. See Caruthers at paragraphs 0010-0011 and Fig. 1. Therefore, Caruthers' system 20 includes two types of controllers: the first controller is the slave controller circuit 26a-d within the module 24a-d and the second controller is the master controller 22.

Regarding the slave controller circuit 26a-d, Caruthers never describes or suggests that the slave controller circuit 26a-d is connected to one of a control receptacle of the module 24a-d and is movable to any of the other modules 24a-d. Rather, Caruthers is designed to include a slave controller circuit 26a-d in each of the modules 24a-d. See Caruthers at abstract and Fig. 1. Additionally, Caruthers never describes or suggests that there is a data connection that connects all of the modules 24a-d to a slave controller circuit 26a such that the slave controller circuit 26a

is able to control all of the modules 24a-d through connection to any one of the modules 24a-d. For example, slave controller circuit 26d is not able to control the other modules 24a-c.

Regarding the master controller 22, Caruthers never describes or suggests that the master controller 22 is connected to one of the modules 24a-d and is movable to any of the other modules 24a-d. Rather, Caruthers explains that the master controller 22 is connected to transmit data on a transmit line 30 to the module 24a and is connected to receive data from the module 24d. See Caruthers at paragraphs 0011-0015. Additionally, Caruthers never describes or suggests that there is a data connection connecting all of the modules 24a-d to the master controller 22 such that the master controller 22 is able to control all of the modules 24a-d through connection to any one module 24a-d. Rather, in Caruthers, the master controller 22 is connected to two modules 24a and 24d. See Caruthers at Fig. 1.

For at least these reasons, the Office has failed to establish a prima facie case of anticipation, which requires that each and every element as set forth in the claim be found, either expressly or inherently described, in a single prior art reference.

Additionally, it would not have been obvious to modify Caruthers to provide the subject matter set forth in the claims because Caruthers' invention requires that the master controller transmit to a first module, that the signal be transmitted along the modules, and that the last module transmit data to the master controller. See Caruthers at paragraph 0005.

Accordingly, claims 1 and 24 are allowable over Caruthers. Claims 3, 4, 6-10, 18, 20, 26-30, and 37 depend from claims 1 or 24, and are allowable for at least the reasons that claims 1 and 24 are allowable.

Claims 1, 4, 11-14, 16, and 31-34 have been rejected as being anticipated by U.S. Patent No. 6,674,274 (Holbrecht). Applicant requests withdrawal of this rejection because Holbrecht does not describe or suggest a control unit connected to one of the control receptacles of a current supply module and movable to any of the control receptacles of the other current supply modules and a data connection connecting all the current supply modules of the current supply unit to a control unit such that the control unit is able to control all of the current supply modules

of the current supply unit through connection to any one control receptacle of the current supply modules of the current supply unit, as recited in independent claims 1 and 24.

Holbrecht relates to a switching regulator 180 including single phase current-mode switching regulators 181-184, a low load comparator 20 electrically connected to each regulator 181-184, an amplifier 18 electrically connected to each regulator 181-184, resistors 16A and 16B at an output of the regulators 181-184 and connected to the amplifier 18, and an output capacitor 22 at the output of the regulators 181-184. See Holbrecht at col. 11, lines 30-38 and Fig. 7. Each of the regulators 181-184 is designed as shown in Fig. 2 to include driver circuitry 52, PWM circuitry 64, MOSFETs 54, 55, 74, 75, comparators 60, 65, and an amplifier 72. See Holbrecht at col. 3, line 65 to col. 5, line 21 and Fig. 2.

However, Holbrecht never describes that a control unit is connected to one of the regulators 181-184 and is movable to any of the other regulators 181-184 and a data connection connecting all the regulators 181-184 to the control unit such that the control unit is able to control all of the regulators 181-184 through connection to any one control receptacle of the regulators 181-184. The Examiner points to feedback circuitry such as the resistors 16A-B and the amplifier 18 to somehow constitute the recited control unit. However, this feedback circuitry is not connected to one of the regulators 181-184 and is movable to any of the other regulators 181-184. Rather, the feedback circuitry is connected in only one configuration, as shown in Fig. 7.

For at least these reasons, the Office has failed to establish a prima facie case of anticipation, which requires that each and every element as set forth in the claim be found, either expressly or inherently described, in a single prior art reference.

Additionally, it would not have been obvious to modify Holbrecht to provide the subject matter set forth in the claims because Holbrecht's feedback circuitry is designed to provide feedback to the entire set of regulators 181-184 and to be configured in a particular manner as shown in Fig. 7 of Holbrecht. Thus, any modification of Holbrecht to provide the design recited in applicant's claims would require a substantial redesign of Holbrecht's regulator 180.

Accordingly, claims 1 and 24 are allowable over Holbrecht. Claims 4, 11-14, 16, and 31-34 depend from claims 1 or 24, and are allowable for at least the reasons that claims 1 and 24 are allowable.

Claims 1, 18, 22-24, 40, 41, 44, and 45 have been rejected as being anticipated by U.S. Patent No. 4,992,925 (Meyer). Applicant requests withdrawal of this rejection because Meyer does not describe or suggest a control unit connected to one of the control receptacles of a current supply module and movable to any of the control receptacles of the other current supply modules and a data connection connecting all the current supply modules of the current supply unit to a control unit such that the control unit is able to control all of the current supply modules of the current supply unit through connection to any one control receptacle of the current supply modules of the current supply unit, as recited in independent claims 1 and 24.

Meyer relates to a converter including a rectifier module 1, a braking chopper module 2, capacitors 3 and 4, a measuring module 5, and switch modules 6-8. See Meyer at col. 3, lines 20-26 and Figs. 1 and 3. The switch modules 6-8 are provided with printed-circuit boards 15-17, which bear a driver circuit for power components of the respective module, and the circuit boards 15-17 are provided with multipoint connectors 29 to provide a detachable connection with a control circuit 48. See Meyer at col. 3, lines 26-45; col. 4, lines 11-26; and Figs. 1 and 3.

However, Meyer never describes or suggests that control circuit 48 is connected to a control receptacle of a module 6-8 and is movable to any of the control receptacles of the other modules 6-8 and a data connection connecting all the modules 6-8 to the control circuit 48 such that the control circuit 48 is able to control all of the modules 6-8 through connection to any one control receptacle of the modules 6-8. Rather, the control circuit 48 is connected to all the modules 6-8 such that it controls all of the modules 6-8 through connection to all of the modules 6-8. As Meyer explains, each of the modules 6-8 includes the connector 29 for connecting to the external control circuit 48 and all of the modules 6-8 are connected to the control circuit 48. See Meyer at col. 3, lines 36-40 and Figs. 1 and 3.

For at least these reasons, the Office has failed to establish a prima facie case of anticipation, which requires that each and every element as set forth in the claim be found, either expressly or inherently described, in a single prior art reference.

Additionally, it would not have been obvious to modify Meyer to provide the subject matter set forth in the claims because any modification of Meyer to provide that the control circuit 48 is connected to a control receptacle of a module 6-8 and is movable to any of the other modules 6-8 and having a data connection as recited in claims 1 and 24 would require a substantial redesign of Meyer's converter.

Accordingly, claims 1 and 24 are allowable over Meyer. Claims 18, 22, 23, 40, 41, 44, and 45 depend from claims 1 or 24, and are allowable for at least the reasons that claims 1 and 24 are allowable.

Independent claim 42 an electrical current is provided to a plasma gas discharge application by providing one or more current supply units, with each current supply unit including a plurality of current supply modules. Each current supply module has an input terminal, an output terminal, and a control receptacle, and each current supply module has a maximum output power. An electrical connection is established between the current supply modules of the current supply unit such that each current supply unit has a maximum output power that is greater than the maximum output power of its individual current supply modules. A control unit is connected to one of the control receptacles, where the control unit is movable to any of the control receptacles of the other current supply modules of the current supply unit. The current supply unit is controlled with the control unit. All of the current supply modules of the current supply unit are connected to the control unit such that the control unit is able to control all of the current supply modules of the current supply unit through connection to any one control receptacle of the current supply modules of the current supply unit. The output power of the current supply unit is provided to a plasma load of a plasma gas discharge application.

Claims 42, 46, 48, and 49 have been rejected as being anticipated by U.S. Patent No. 6,700,332 (Yokozeki). Applicant requests withdrawal of this rejection because Yokozeki fails to describe or suggest a control unit that is movable to any of the control receptacles of other

current supply modules of the current supply unit and all of the current supply modules of the current supply unit being connected to the control unit such that the control unit is able to control all of the current supply modules of the current supply unit through connection to any one control receptacle of the current supply modules of the current supply unit, as recited in claim 42.

Yokozeki relates to a discharge lamp system having a high frequency power source 10 that includes amplifiers 11a-d, a preamplifier 12, and one or more combiners 14a and 14b that each receive output of two of the amplifiers 11a-d. See Yokozeki at col. 10, lines 1-42 and Figs. 1, 12a, and 12b. The lamp system can include a phase detector 32 at an output of a power converter 11, a controller 34 that receives the phase angle detected by the phase detector 32, and a power detector 33 that also feeds into the controller 34. See Yokozeki at col. 17, lines 24-54 and Fig. 14.

However, Yokozeki never describes or suggests that the controller 34 is movable to any of a control receptacle of the amplifiers 11a-d or that all of the amplifiers 11a-d are connected to the controller 34 such that the controller 34 is able to control all of the amplifiers 11a-d through connection to any one control receptacle of the amplifiers 11a-d. Indeed, in the embodiment shown in Fig. 14 of Yokozeki, only one power converter 11 is displayed, while in the embodiment shown in Figs. 1, 12a, and 12b, there is no description of a controller that is connected to any of the amplifiers 11a-d.

For at least these reasons, the Office has failed to establish a prima facie case of anticipation, which requires that each and every element as set forth in the claim be found, either expressly or inherently described, in a single prior art reference.

Additionally, it would not have been obvious to modify Yokozeki to provide the subject matter set forth in the claims because any modification of Yokozeki to provide a control unit as recited would require a substantial redesign of Yokozeki's lamp system. Accordingly, claim 42 is allowable over Yokozeki, as are dependent claims 46, 48, and 49.

Claim Rejections – 35 U.S.C. §103

Claims 5, 21, 25, 38, and 39 have been rejected as being unpatentable over Caruthers. Applicant requests withdrawal of this rejection for the following reasons. Claims 5, 21, 25, 38, and 39 depend from claims 1 or 24, which were rejected as being anticipated by Caruthers. As discussed above, claims 1 and 24 are allowable over Caruthers or any proper modification of Caruthers. Accordingly, claims 5, 21, 24, 38, and 39 are allowable for at least the reasons that claims 1 and 24 are allowable.

Claims 15 and 35 have been rejected as being unpatentable over Caruthers in view of U.S. Patent No. 5,694,312 (Brand). Applicant requests withdrawal of this rejection for the following reasons. Claims 15 and 35 depend from claims 1 and 24, which were rejected as being anticipated by Caruthers. As discussed above, Caruthers fails to describe or suggest a control unit connected to one of the control receptacles of a current supply module and movable to any of the control receptacles of the other current supply modules and a data connection connecting all the current supply modules of the current supply unit to a control unit such that the control unit is able to control all of the current supply modules of the current supply unit through connection to any one control receptacle of the current supply modules of the current supply unit, as recited in independent claims 1 and 24.

Brand does not remedy the failure of Caruthers to describe or suggest this subject matter. Brand relates to an uninterruptible power supply in which AC power from an AC input sub-assembly 500 is received through a bus 510 and transmitted from the bus 510 to transverters 520-522, 530-532, 540-542. See Brand at col. 5, line 5 to col. 6, line 22 and Figs. 7 and 8. Each of the transverters and the AC input sub-assembly 500 is connected to control circuitry 585. See Brand at col. 6, line 53 to col. 7, line 32 and Fig. 8. However, Brand never describes or suggests that the control circuitry 585 would be configured as claimed.

Accordingly, claims 1 and 24 are allowable over any proper combination of Caruthers and Brand.

Claims 1, 17, and 36 have been rejected as being unpatentable over U.S. Patent No. 6,191,500 (Toy) in view of Caruthers. Applicant requests withdrawal of this rejection because,

as discussed above, Caruthers does not describe or suggest a control unit connected to one of the control receptacles of a current supply module and movable to any of the control receptacles of the other current supply modules and a data connection connecting all the current supply modules of the current supply unit to a control unit such that the control unit is able to control all of the current supply modules of the current supply unit through connection to any one control receptacle of the current supply modules of the current supply unit, as recited in independent claims 1 and 24, and because Toy does not remedy the failure of Caruthers to describe or suggest this subject matter.

In Toy, an uninterruptible power source system 300 includes a utility source 110A and 110B coupled into uninterruptible power supply modules 360A-D, which output a signal to a paralleling switchgear 370 and a switchgear 380 to supply power to a load 230. See Toy at col. 5, line 61 to col. 6, line 11. However, Toy never describes or suggests that any of the modules 360A-D would be connected to a control unit or that the modules 360A-D would be arranged as power supply unit having different maximum power outputs.

Accordingly, claims 1 and 24 are allowable over any proper combination of Toy and Caruthers. Claims 17 and 36 depend from claims 1 and 24, and are allowable for at least the reasons that claims 1 and 24 are allowable, and for containing allowable subject matter in their own right. Claims 17 and 36 both recite an interlock circuit for each of the current supply units, where the interlock circuit is adapted for connection to the power converter modules of each of the current supply units. As the Examiner agrees, Caruthers fails to describe or suggest such an interlock circuit. Moreover, while Toy mentions that the generator paralleling switchgear 330 can provide an interlock for the modules 360A-D, Toy never suggests that there would be a switchgear 330 provided for each of a current supply unit, which includes a plurality of modules.

Claims 43, 50, and 51 have been rejected as being unpatentable over Yokozeki. Claims 50 and 51 depend from claim 42, which was rejected as being anticipated by Yokozeki. As discussed above, Yokozeki does not describe or suggest a control unit that is movable to any of the control receptacles of other current supply modules of the current supply unit and all of the current supply modules of the current supply unit being connected to the control unit such that

the control unit is able to control all of the current supply modules of the current supply unit through connection to any one control receptacle of the current supply modules of the current supply unit, as recited in claim 42. Additionally, as also discussed above, it would not have been obvious to modify Yokozeki to provide the subject matter set forth in claim 42. Accordingly, claim 42 is allowable over Yokozeki.

Dependent claims 50 and 51 are allowable for at least the reasons that claim 42 is allowable and for containing allowable subject matter in their own right. For example, claim 50 recites that the established electrical connection between multiple first current supply modules is reconfigured to form a first current supply unit having another first maximum power output that is different from the first maximum power output. However, in Yokozeki, there is no suggestion that an electrical connection between multiple converters 11a-d would be reconfigured in this manner. In particular, the Examiner appears to concede that Yokozeki is silent on such a reconfiguration since the Examiner points to no passage in Yokozeki that describes such reconfiguration. The Examiner appears to argue that Yokozeki could be reconfigured by adding an electrical connection and a unit 11 or by changing the electrical connection of the converter 11c to connect to the combiner 14a (instead of the combiner 14b). However, claim 50 does not recite that the reconfiguration includes adding a current supply module; rather claim 50 requires that the reconfiguration be between the multiple first current supply modules (those already present) in the current supply unit. Thus, the addition of a unit 11 to Yokozeki's system would not provide the recited reconfiguration. Additionally, if one were to connect the converter 11c to the combiner 14a, then such a reconfiguration would cause the combiner 14b to receive only the connection from the converter 11d, and therefore such a design would lack the establishment of the electrical connection between multiple current supply modules to form a current supply unit because such a design would provide for a current supply unit having a single converter 11d.

Claim 47 has been rejected as being unpatentable over Yokozeki in view of Meyer. Claim 47 depends from claim 42, which was rejected as being anticipated by Yokozeki. As discussed above, Yokozeki fails to describe or suggest a control unit that is movable to any of the control receptacles of other current supply modules of the current supply unit and all of the

current supply modules of the current supply unit being connected to the control unit such that the control unit is able to control all of the current supply modules of the current supply unit through connection to any one control receptacle of the current supply modules of the current supply unit, as recited in claim 42. And, as also discussed above, Meyer does not remedy the failure of Yokozeki to describe or suggest this subject matter. Accordingly, claim 42 is allowable over any proper combination of Yokozeki and Meyer.

Conclusion

In conclusion, applicant submits that all claims are in condition for allowance. The fee for \$120.00 for the One Month Extension of Time to and including February 11, 2008, inasmuch as February 9, 2008 was a Saturday and February 10, 2008 was a Sunday, is being paid concurrently with the Electronic Filing System (EFS). Please apply any other charges or credits to deposit account 06-1050, referencing Attorney Docket No. 15540-019001.

Respectfully submitted,

Date: February 11, 2008

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